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The last number of the *American Chemical Journal* contains a paper by Dr. G. P. Baxter, of Harvard University, on the occlusion of hydrogen by cobalt and other metals. Statements in literature regarding this subject vary very much, but Dr. Baxter claims that this is due chiefly at least to the different degrees of purity of the metal. Ingot cobalt, or very pure cobalt, when very finely divided, has the power of occluding hydrogen to a very slight extent. Most of those cases where there is a large amount of hydrogen absorbed are, at least, in part due to the presence of impurities in the cobalt used. Nickel, silver and copper act similarly to cobalt in occluding but small quantities of hydrogen. Indeed, it is questioned whether silver actually occludes any hydrogen.

Japanese farms are, to a large extent, exhausted of phosphoric acid, so that the discovery of phosphate beds in that country is very welcome. This discovery is described by K. Tsuneto in the *Chemiker Zeitung*. The phosphate beds which are on island Kinshu are largely lime and sand running only up to 20% phosphate; but this can be very successfully used in lieu of better material and will prove of great service to Japan. The remainder of the material of the phosphate beds seems to be a sand cemented together by limestone. Some fossil remains are present.

J. L. H.

CURRENT NOTES ON METEOROLOGY.

LECTURES ON METEOROLOGY.

IN the Public Educational Course, now being given in Baltimore, under the auspices of the Johns Hopkins University, a series of fifteen class lectures, by Dr. Oliver L. Fassig, Instructor in Climatology in the University, is announced. These lectures are to come on Saturday morning, beginning about the middle of December, and are intended especially for teachers. The fee for the course is \$3, and with the additional privilege of class work, consisting of written exercises and final examination, the fee is \$5. For regular attendance, satisfactory class or laboratory work, and final examination, a simple certificate will be awarded to successful students. The attendance at this educational course this year is to be about eighty-five. The subjects of Dr. Fassig's lectures are as follows :

I., II. The Temperature of the Atmosphere; III., IV. Forms of Water in the Atmosphere; V. The Weight and Extent of the Atmosphere; VI., VII., VIII. The Movements of the Atmosphere; IX. Weather; X. Climate; XI. Do Climates Change? XII., XIII. Fortelling the Weather; XIV. The Work of a National Weather Bureau; XV. Two Centuries of Progress in Meteorology.

PHYSIOLOGICAL EFFECTS OF ANTARCTIC COLD AND NIGHT.

DR. FREDERICK A. COOK, Surgeon of the *Belgica* expedition to the Antarctic, writes of some of the incidents of the voyage in *McClure's Magazine* for November. The physiological effects, noted as a result of the darkness and cold of the Antarctic night, are thus described: "The long darkness, the isolation, the tinned foods, the continued low temperature, with increasing storms and a high humidity, finally reduced our systems to what we will call polar anæmia. We became pale, with a kind of greenish hue. * * * The stomach and all the organs were sluggish, and refused to work. Most dangerous of all were the cardiac and cerebral symptoms. The heart acted as if it had lost its regulating influence. Its action was feeble, but its beats were not increased until other dangerous symptoms appeared. Its action was irregular, feeble, and entirely unreliable throughout the night. The mental symptoms were not so noticeable. The men were incapable of concentration and unable to continue prolonged thought. One sailor was forced to the verge of insanity, but he recovered with the returning sun." Similar effects have been noticed in the Arctic, and hence show a well-marked series of physiological changes which take place under the peculiar conditions which surround Arctic and Antarctic explorers during the long polar night.

PHYSIOLOGICAL EFFECTS OF HIGH ALTITUDES.

THE September number of the *Zeitschrift für Luftschiffahrt* contains a short paper by Dr. Mertens on the physiological effects of high altitudes; the suggested causes of these various effects, and possible remedies. The article gives a compact summary of this interesting problem. It is to be noted that Dr. Mertens

uses the term *Höhenkrankheit* rather than *Bergkrankheit*. This seems a reasonable change. The latter word really includes only the physiological effects experienced by mountain climbers, while the former includes all the effects of diminished pressure, whether noted by mountain climbers, who are still on *terra firma*, or by aëronauts, who are carried above the surface of the earth in the car of a balloon.

R. DEC. WARD.

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SCIENTIFIC NOTES AND NEWS.

PROFESSOR E. E. BARNARD of the Yerkes Observatory, University of Chicago, sailed from New York on December 9th for England. He intends to arrange for a lens for the Bruce photographic telescope.

PROFESSOR EDWARD ORTON, JR., has been appointed state geologist, of Ohio, to succeed his father, the late Dr. Edward Orton. Professor Orton served as an assistant on the Ohio Survey, studying the distribution of the coal measures, and later prepared the excellent reports on the clay and clay industries of the State which were published in Volumes V. and VII. of the Geological Survey of Ohio and in the Reports of the National Brick Manufacturer's Association. Since 1894 he has been the director of the department of clay-making and ceramics in the Ohio State University in which is given the only four-year course in ceramics in this country. This appointment ensures the continuance of the excellent work in economic geology which has characterized the later Geological Reports of Ohio.

DR. JOKICHI TAKAMINE, of the University of Tokio, Japan, known for his researches on digestive ferments, is at present on a tour of inspection of the larger educational institutions of the United States. He has been sent by the Japanese government to examine the scientific work and methods of American universities.

THE *New York Herald* has received a cablegram stating that M. Daniel Osiris has given a large endowment to the Institute of France to provide a triennial prize of 100,000 fr. to be awarded for a great scientific discovery or work

of art. Surgical or medical discoveries are to be especially considered.

PROFESSOR DR. FÖRSTER of the Mülhausen *Gymnasium* has received a call from the Dutch Government to geological research in Sumatra. He will be absent about one year and a half.

SIR WILLIAM MACCORMAC, the eminent British surgeon, who it will be remembered volunteered his services at the seat of war in South Africa, arrived at Cape Town on November 20th.

THE Special Board for Biology and Geology, of Cambridge University, have adjudged the Walsingham medal for 1899, to H. H. W. Pearson, B. A., Gonville and Caius College, for his essay entitled 'The Botany of the Ceylon Patanas,' and a second Walsingham medal to J. Barcroft, B. A., Fellow of King's College, for his essay entitled 'The Gaseous Metabolism of the Submaxillary Gland.'

MR. W. F. COOPER, Clare College, Cambridge University, has been nominated by the Special Board for Biology and Geology to occupy the University table at the Zoological Station at Naples until February 1, 1900.

DR. L. A. BAUER, on October 25th, was the guest of the Royal Geographical Society of St. Petersburg. At the close of the meeting he exhibited various maps relating to the magnetic survey of the United States and Alaska in general, and of the special magnetic survey of Maryland.

MR. HENRY P. WALCOTT, of Cambridge, has been elected president of the Massachusetts Forestry Association.

THE death is announced of Professor Francis Guthrie at the age of sixty-eight. He was for many years professor of mathematics in the South African College, and made valuable contributions to the botany of South Africa.

PROFESSOR P. KNUTH died at Kiel on October 30th, at the age of forty-five years. He was well known for his researches on cross-fertilization.

WE also regret to learn of the death of Professor R. Yatube, the Japanese botanist.

IN accordance with the German custom the former pupils of Dr. William H. Welch, pro-